

**SC209-WP-04-18
RTCA Special Committee 209
ATCRBS / Mode S Transponder
Meeting #4
Honeywell, Olathe, Kansas**

18 – 19 October 2006

**Summary Highlights
of
EUROCAE WG-49 Meeting #8
October 4-6, 2006_EASA, Cologne, Germany**

Presented by R.H. “Bob” Saffell

EUROCAE_WG-49-Mtg-08-Minutes__Summary Highlights

- Meeting addressed some 30 Working Papers as per the Working Paper List which can be provided for those interested
- Action A5/01 Regards Transponder Reversion to Standby
 - Action is still open and requires input from SC-209_TP
- Review of WP49N8-13, e.g., SC-209 Meeting 3 Summary, Briefing by RHS
 - WG-49 **unanimously** agrees that full A/B capability is required for Level 2 Transponders [Action_RHS, WG49A8/01]
 - Discussion vectored to WG49N8-05, regards P1-P3-P4 Issue
 - ED-73B section 3.9.2 was changed to remove “trailing edge” terminology. Therefore, ED-73B and DO-181C are consistent.
 - No further action required
 - Discussion vectored to the setting of Bit 25 in BDS 1,0
 - Decision stands that the setting shall remain as currently stated in Doc. 9871 definition of BDS 1,0.

EUROCAE_WG-49-Mtg-08-Minutes__Summary Highlights

- Discussion vectored to definition of Mode-S Sub network Number in BDS 1,0
 - SC-209 Transponder Vendors maintain that the need to set the Version Number to “3” was not requested until the ICAO SCRSP TSG meeting in Ft. Lauderdale, Fl. USA, in January/February 2005.
 - Note that ICAO Annex 10, Amendment 77 was not published until November 28, 2002
 - SC-209, particularly RCI and HW representatives have indicated that ICAO Annex 10, Volume III, Part 1, Chapter 5, Appendix Table 2-16 does not specify what goes into the Sub network Version Number Field and has therefore been set to “0”
 - WG49 members point out that the definition is provided in Volume III, Part 1, Section 5.2.9.2.
 - Review Volume III, Part 1, Section 5.2.9.2 provided the following definition (exactly)
Bits 17-23 Mode S Sub network Version No.
0 = Mode S sub network not available
1 = Version No. 1 (1996)
2 = Version No. 2 (1998)
3 = Version No. 3 (2002)
4-127 = Unassigned
 - RHS Pointed out that:
 - » Definition in 5.2.9.2 does not define “Version Number” __OF WHAT?
 - » No reference to section 5.2.9.2 is provided in Table 2-16, therefore, no traceability to the requirement is established.

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- RHS Pointed out that: (continued)
 - » US TSO-C112 calls out certification requirement to RTCA DO-181X
 - » RTCA DO-181C vectors DO-218A for full definition of BDS 1,0, e.g., Data Link Capability Report
 - » DO-218B section 2.2.8.1 Does Not specify the setting of bits 17-23 other than:
 - 17-23 Mode S Sub network Version No.
 - 0 = Mode S sub network not available
 - 1 = Version No. 1
 - 2-127 = Unassigned

Note: Version 1 is defined by this document.
- WG49 members agree that no clear traceability is provided for the Sub network Version Number being set to three.
 - DOC. 9871 will be updated to provide clear definition and traceability as needed
- RTCA SC-209 should ensure that clear definition and traceability is provided in DO-181D for the setting of the Sub network Version Number
- Discussion vectored to the label “335” Track Angle Rate Issues
 - ARINC-429 and ARINC-718A specify Track Angle Rate as a “+” Only Parameter
 - ARINC-704 (IRS) and ARINC-705 (AHRS) specify the parameter as being “+/-”
 - BDS 5,0 requires that the Track Angel Rate data be “+/-”

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- ERROR appears to have been induced in ARINC-429 and ported to ARINC-718A
- Action Item__RHS and SC209 Vendors to clarify and correct with ARINC
[WG49A8/02]
- Discussion vectored to the need for implementation of BDS 5,F
 - WG49 members agreed that there is NO Mandate to implement BDS 5,F
 - However, the definition is retained as implementation may be required in a few years_____particularly for meteorological data (BDS 4,4 and BDS 4,5)
 - If currently implemented, BDS 5,F shall be implemented as currently defined
- At this point, discussion of DO-181D Appendix B, e.g., Doc. 9871, MSSS was considered complete. Discussions were vectored into from RHS briefing discussion
- Review of WG49N8-10a, On Ground Settings [pull up document]
[RHS_WG49A8/06]
 - ED-73B section 3.20.2.7.b modified to be effectively the same as DO-181D in regards to FS, VS, CA field settings in regards to on-ground status
 - It was noted that ICAO DOES NOT allow a Pilot Switch for establishing on-ground / airborne status.
 - Action Item to SC-209__RHS to clarify and correct in DO-181D section 2.1.7.b.
 - Action Item to RHS to clarify wording “in this field...”
 - Action Item to SC-209__RHS to check situation of No Test appears to be written for CA=6

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- Review of WG49N8-14, On Ground Validation
 - Action Item to SC-209__RHS to correlate Working Paper with 260, 260A, 181C/D for On-Ground / Airborne Status
- Review of WG49N8-06, BDS 4,0 Register Loading Issues
 - WG49 concludes that bits 54, 55, and 56 shall all be set to “0” until such time as the appropriate data is Provided (e.g., the bit setting) to the transponder.
 - Effectively, no one knows when or how the data will be established or provided to the transponder
 - EP, Eurocontrol, Actioned to take the issue back to the ICAO TSG to clarify bit setting to “0”
 - SC-209__RHS Actioned to take the issue back to DO-181D Appendix D to set bits to “0”.
- Review of WG49N8-07, Example of ELS/EHS Requirements
 - WG49 agrees that the requirements should be reviewed, scrubbed, and adapted to ED-73B and DO-181D as detailed requirements.
 - RHS to follow up with Test Procedures

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- Review of WG49N8-23, Need for BDS 1,7 ELS Mandate
 - Document from UK NATS: All SC-209 should review
- Review of WG49N8-18, Power Isolation
 - Action RHS_review and comment back to Eurocontrol
- Review of WG49N8-09, General Aviation Guidance Material
 - Discussion continues as to how much guidance material should go into ED-73B in regards to General Aviation transponders.
 - SC-209 should consider or comment on how much is appropriate for General Aviation guidance in DO-181D if any.
- Review of WG49N8-20/20A/21/22/29, TCAS Interoperability and Invalid Address Issues
 - Action SC-209_RHS, BT [WG49A8-15/18] to take comments back to SC-209 and propose TCAS/Transponder interoperability tests into ED-73.

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- Meeting Schedule Discussion (all tentative)
 - WG49 Work Plan expects the January meeting to be the last
 - However, SC-209 will probably not be completed until late June / July
 - Probable SC-209 Meetings in March and May with possible out to FRAC at end of May.
 - Final SC-209/WG-49 meeting possibly in July.
 - Need to address schedule and firm up at this SC-209 Meeting